A Division of Systems, Inc.

POWERAMP®

Premium Loading Dock Systems

Centra Power

Owner's/User's Manual

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Recognize Safety Information

Safety-Alert Symbol

The Safety-Alert Symbol identifies important safety messages on equipment, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

DANGER

The use of the word DANGER signifies the presence of an extreme hazard or unsafe practice which will most likely result in severe injury or death.

WARNING

The use of the word WARNING signifies the presence of a serious hazard or unsafe practice which may result in serious injury or death.

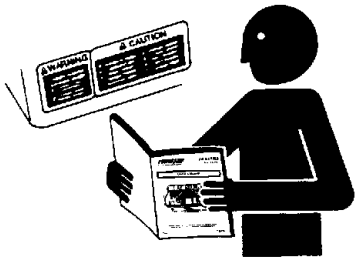
CAUTION

The use of the word CAUTION signifies possible hazard or unsafe practice which could result in personal injury.

IMPORTANT

The use of the word IMPORTANT is to draw attention to a procedure that needs to be followed to prevent machine damage.

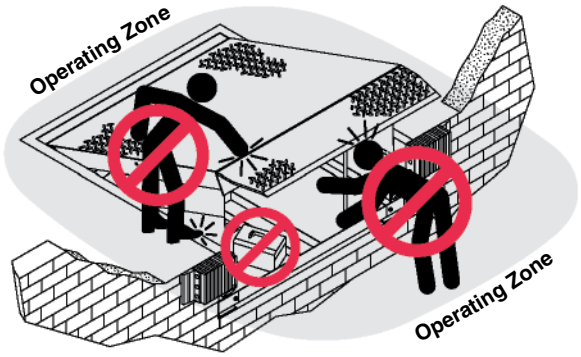
General Operational Safety Precautions



Read and understand the operating instructions and become thoroughly familiar with the equipment and its controls before operating the dock leveler.

Never operate a dock leveler while a safety device or guard is removed or disconnected.

Never remove DANGER, WARNING, or CAUTION signs or Decal's on the equipment unless replacing them.



Do not start the equipment until all unauthorized personnel in the area have been warned and have moved outside the operating zone.

Remove any tools or foreign objects from the operating zone before starting.

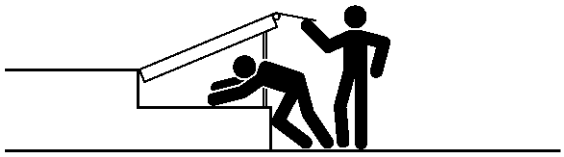
Keep the operating zone free of obstacles that could cause a person to trip or fall.

Operational Safety Precautions

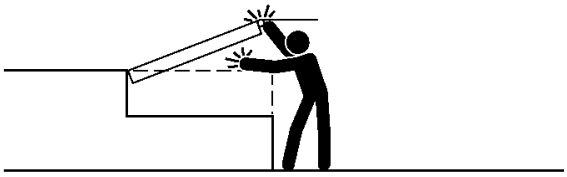
Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

DANGER

Stay clear of dock leveling device when transport vehicle is entering or leaving area.

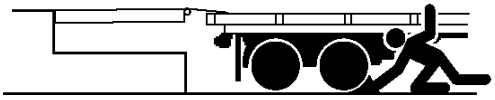


Do not move or use the dock leveling device if anyone is under or in front of it.

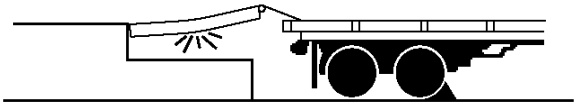


Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

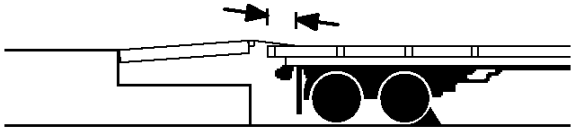
CAUTION



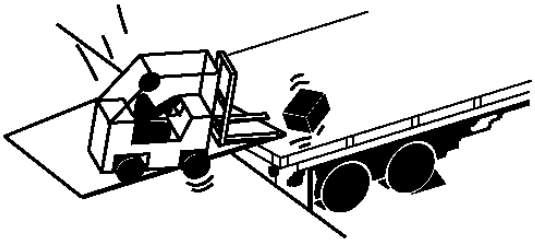
Chock/restrain all transport vehicles. Never remove the wheel chocks until loading or unloading is finished and vehicles driver has been given permission to drive away.



Do not use a broken or damaged dock leveling device. Make sure proper service and maintenance procedures have been performed before using.

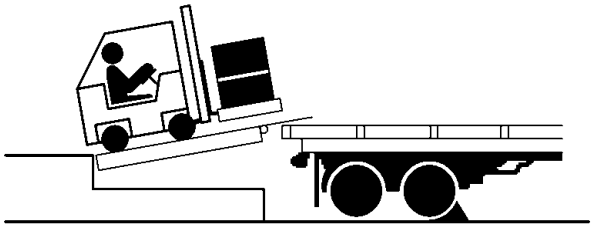


Make sure lip overlaps onto the transport vehicles bed at least 4 in. (102 mm).

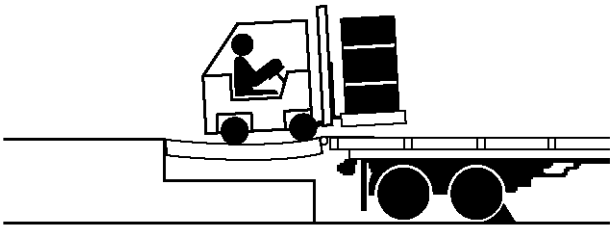


Keep a safe distance from both side edges.

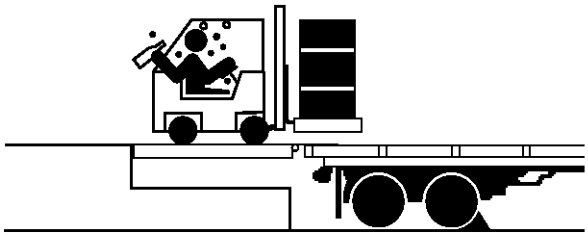
WARNING



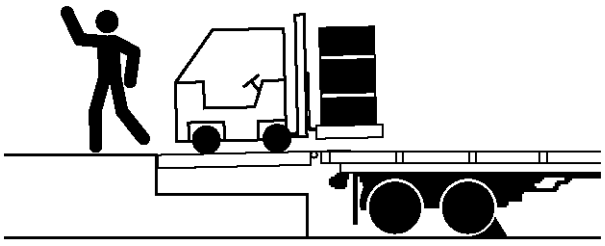
Do not use dock leveling device if transport vehicle carrier is too high or too low.



Do not overload the dock leveling device.



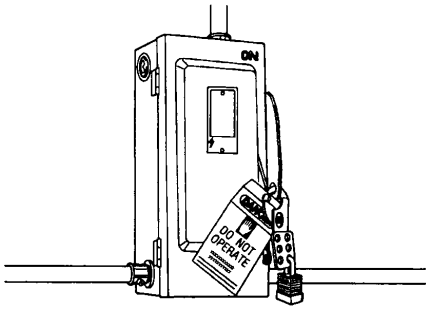
Do not operate any equipment while under the influence of alcohol or drugs.



Do not leave equipment or material unattended on dock leveling device.

Maintenance Safety Precautions

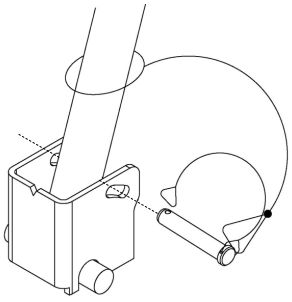
WARNING



Hydraulic and electrical power must be OFF when servicing the equipment. For maximum protection, use an OSHA approved locking device to lock out all power sources. Only the person servicing the equipment should have the key to unlock the device.

CAUTION

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.



The maintenance prop must be in the upright “service” position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the device.

WARNING

ALWAYS disconnect electrical power source and ground wire before welding on dock leveler.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground to the dock leveler frame.

Failure to follow these instructions may result in damage to dock leveler and/or serious personal injury or death.

WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded

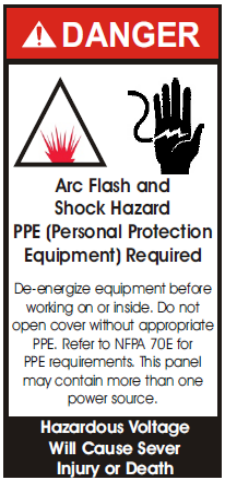
DO NOT grind or weld if un contained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

Failure to follow these instructions may result in serious personal injury or death.

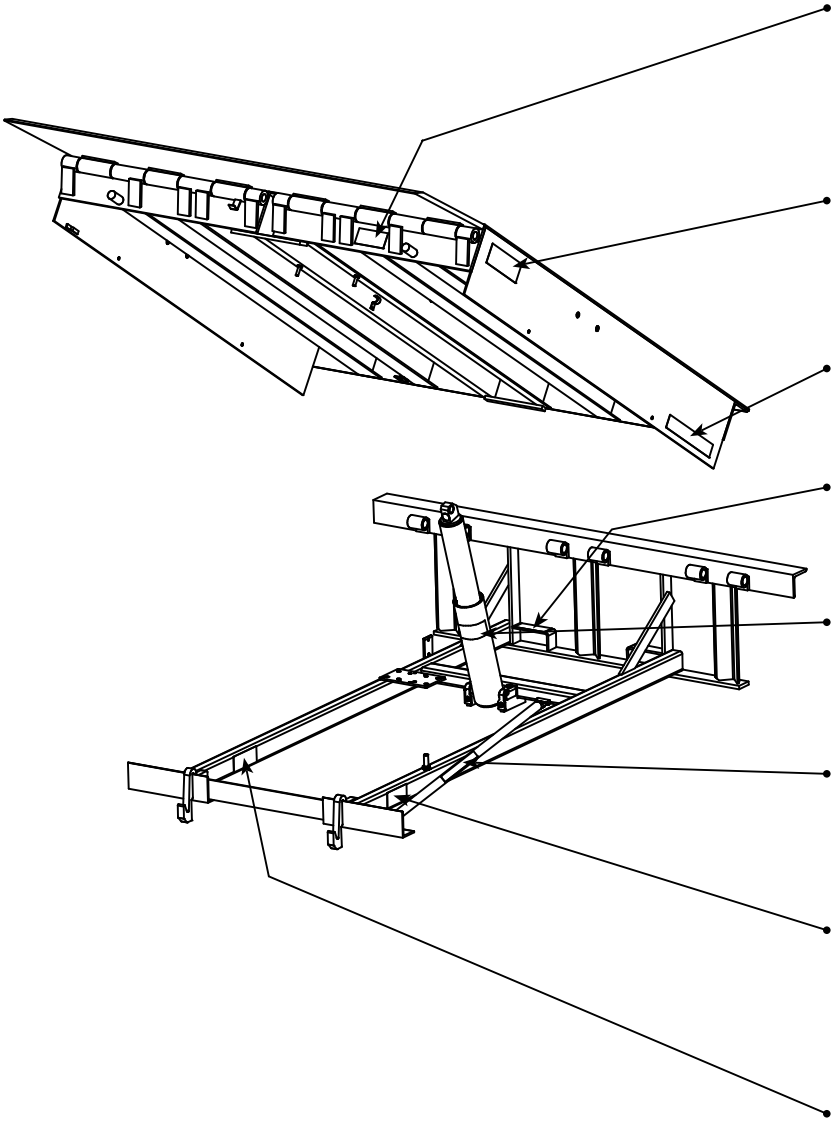
WARNING

ALWAYS stand clear of dock leveler lip when working in front of the dock leveler. Failure to do this may result in serious personal injury or death.

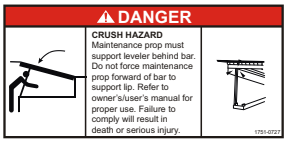

DANGER
Arc Flash and
Shock Hazard
PPE (Personal Protection
Equipment) Required
De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.
Hazardous Voltage
Will Cause Sever
Injury or Death

Safety Decal's

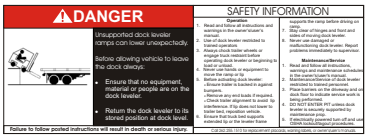
Every 90 days (quarterly) inspect all safety labels and tags to ensure they are on the dock leveler and are easily legible. If any are missing or require replacement, please call 1-800-643-5424 for replacements.



1751-0727


DANGER
CRUSH HAZARD
Maintenance prop must support leveler behind bar. Do not force maintenance prop forward of bar to support lip. Refer to owner's/user's manual for proper use. Failure to comply will result in death or serious injury.

1751-0730 (x2)


DANGER
Unsupported dock leveler ramps can lower unexpectedly.
Before allowing vehicle to leave the dock always:
Ensure that no equipment, material or people are on the dock leveler
Return the dock leveler to its stored position at dock level.
Failure to follow posted instructions will result in death or serious injury.
SAFETY INFORMATION

(decal placed in same position on both sides)

1751-0329 (x2)

(decal placed in same position on both sides)

1751-0330 (x2)

(decal placed in same position on both sides)

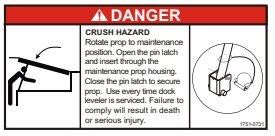
1751-0138

DANGER
CRUSH HAZARD
DO NOT REMOVE hydraulic cylinder until leveler is safely supported by maintenance prop. Refer to owner's/user's manual for proper maintenance procedure. Failure to comply will result in death or serious injury.

1751-0729

DANGER
CRUSH HAZARD
Do not work under dock leveler unless this maintenance prop has been secured in the upright position. See owner's/user's manual for proper procedures. Failure to comply will result in death or serious injury.

1751-0731


DANGER
CRUSH HAZARD
Rotate prop to maintenance position. Open the pin latch and insert through the maintenance prop housing. Close the pin latch to secure prop. Use every time dock leveler is serviced. Failure to comply will result in death or serious injury.

1751-0726

DANGER
CRUSH HAZARD
DO NOT ENTER PIT unless dock leveler is safely supported by maintenance prop. Place barriers on driveway and dock floor to indicate service work being performed. Refer to owner's/user's manual for proper maintenance procedures. Failure to comply will result in death or serious injury.

Note
This is a example of dock leveler safety decals. See manual for your specific model for correct safety decal sheet or consult Tech Services

OWNER'S/USER'S RESPONSIBILITIES

1. The owner/ user should recognize the inherent dangers of the interface between the loading dock and the transportation vehicle. The owner/ user should, therefore, train and instruct all operators in the safe operation and use of the loading dock equipment in accordance with manufacturer's recommendations and industry standards. Effective operator training should also focus on the owner's/user's company policies and operating conditions. Maintaining, updating and re training all operators on safe working habits and operation of the equipment, regardless of previous experience, should be done on a regular basis and should include an understanding and familiarity with all functions of the equipment. Owner's/ user's shall actively maintain, update and retrain all operators on safe working habits and operations of the equipment.

2. The manufacturer shall provide to the initial purchaser all necessary information regarding Safety Information, Operation, Installation and Safety Precautions, Recommended Initial and Periodic Inspections Procedures, Planned Maintenance Schedule, Product Specifications, Troubleshooting Guide, Parts Break Down, Warranty Information, and Manufacturers Contact Information, as well as tables to identify the grade(slope) for all variations of length or configuration of the dock leveling device and information identifying the maximum uncontrolled drop encountered when sudden removal of support while in the working range of the equipment.

3. It is recommended that when the transportation vehicle is positioned correctly in the dock opening and in contact with both bumpers, there shall be a minimum of 4.00 inches (100mm) overlap of the leveling device and the transportation vehicle at all times during the loading and unloading process.

4. The Owner/User must review all name plates, placards, decals, instructions and posted warnings and place the same in view of the operator or maintenance personnel for whom such warnings are intended for. Contact manufacturer for any replacements.

5. Manufacturer's recommended periodic maintenance and inspection procedures in effect at the date of shipment shall be followed at all times. Written documentation of maintenance, replacement parts or damage should be retained. In the event of damage notification to the manufacturer is required.

6. Loading dock equipment that has been structurally damaged or has experienced a sudden loss of main support while under load (such as what might occur when a transport vehicle pulls out from under the leveling device) shall be removed from service, inspected by a manufacturer's authorized representative, and repaired or replaced as needed before being placed back in service.

7. Any modifications or alterations of loading dock equipment shall only be done with prior written approval from the manufacturer and the same shall be at least as safe as the original equipment was prior to the modification and shall also satisfy all safety requirements of the manufacturer for the particular application of the leveling device.

8. When industrial moving devices are being used in the loading or unloading of product from the transportation vehicle, this vehicle shall have the brakes and wheel chocks applied appropriately or all other positive restraining device shall be fully utilized. It is recommended that trailers with air-ride suspension systems shall have its air exhausted prior to performing loading and unloading operation to minimize trailer bed drop.

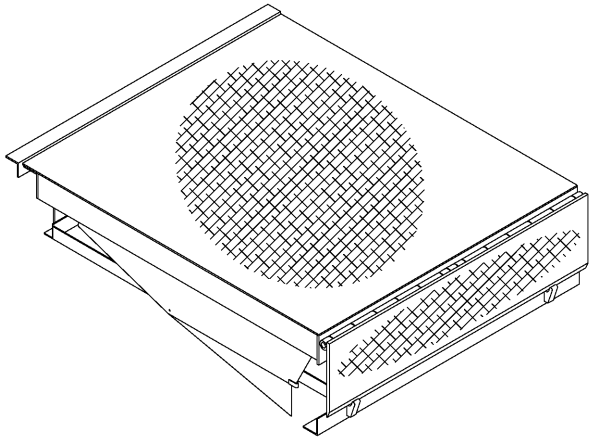
9. Loading dock safety equipment should never be used outside of its intended use, vertical working range, or capacity. Please consult the manufacturer if you have any questions as to the use, vertical working range or capacity of the equipment. Only properly trained and authorized personnel should operate the equipment.

10. When selecting loading dock safety equipment, it is important to consider not only present requirements but also future plans and any possible adverse conditions, environmental factors or usage.

THEORY

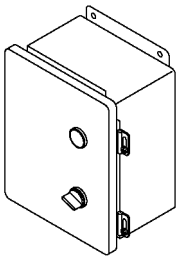
The Centra Power System eliminates individual hydraulic pumps located on each leveler. The Centra Power pump station will run multiple dock levelers and or vehicle restraints. When a dock leveler or vehicle restraint are operated, one electrical signal is sent to the pump station activating the hydraulic power unit. A signal is also sent to the Centra Power valve at the door position being operated. The combination of these two signals allow the dock leveler or restraint to operate. The Centra Power pump station allows more than one leveler or vehicle restraint to operate at the same time.

General Information



Congratulations on your choice of a Poweramp dock leveler. This manual covers the Centra Power hydraulic system.

Designed by Poweramp to be a marvel of simplicity and efficiency, your Centra Power hydraulic system properly installed, will provide many years of trouble-free performance with an absolute minimum of maintenance. Its revolutionary hydraulic system efficiently controls and operates every function. To obtain maximum performance and longest possible use, a simple program of preventive maintenance is recommended.

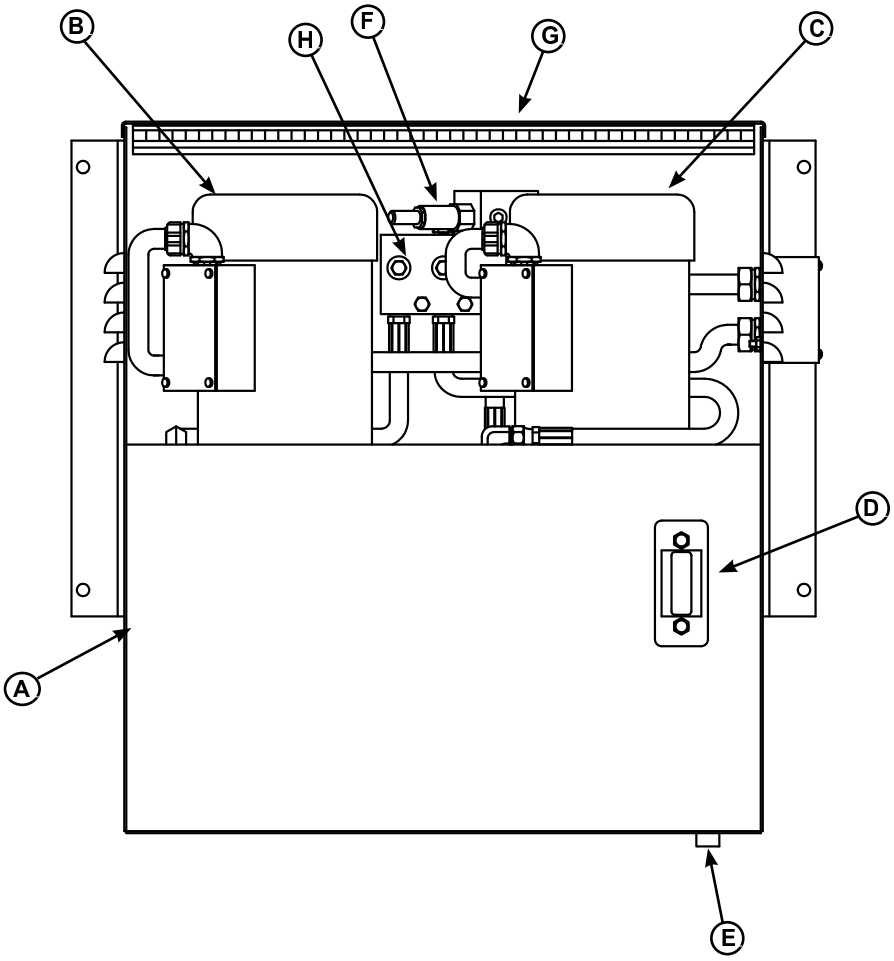


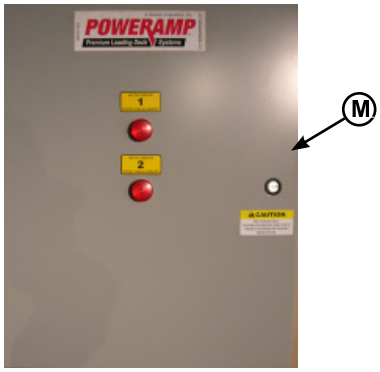
The Centra Power System comes equipped with an electrical control panel, which allows push button operation of the dock leveler functions. Each dock leveler and control panel has been factory prewired and tested to ensure satisfactory operation.

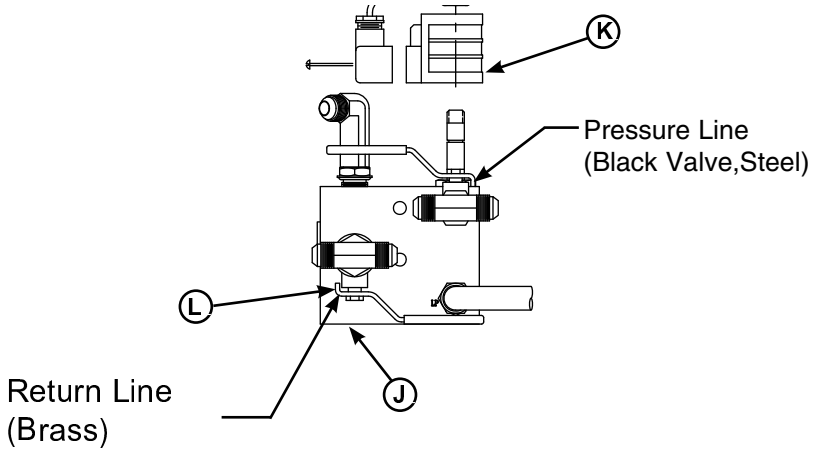
To illustrate which connections are to be made in the field at installation, electrical drawings are included with each order or by contacting Poweramp Technical Services.

Once again, thank you and congratulations on your purchase of a Poweramp Centra Power System.

Component Identification







A — Pump Station
B — Pump Motor #1
C — Pump Motor #2
D — Site Glass
E — Drain Plug
F — Main System Relief
G — Pump Station Door
H — Distribution Manifold
J — Leveler Manifold
K — Coil
L — Ball Valves
M —Control Panel

Read carefully and understand the installation manual for the leveler and or the restraint to be installed in conjunction with the Centra Power manual.

Read carefully and understand the Centra Power layout drawing. The drawings will have all the required information on hose charts, fluid capacity and location of the mid run and end run valve blocks.

The Centra Power pump station is typically located in the center of the dock levelers with even amount of doors on each side. The pump station should be mounted a minimum of 72” off the finished floor (out of the way of damage).

The Pump Station Control Box should be mounted a minimum of 72” off the finished floor next to the Pump Station.

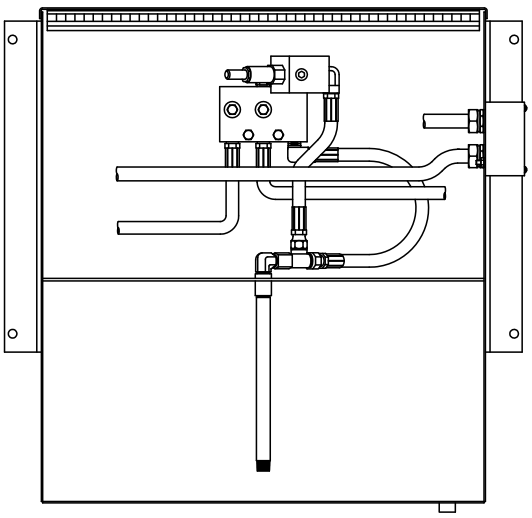
Hose installation can be started at the pump station or at the furthest dock leveler. Note: when installing hose or valve blocks always keep shipping caps on fittings until hoses are connected to the manifolds.

Typical installation the pressure lines will have #8 JIC fittings and 1/2 dia. lines. The returns lines if without restraints will be #8 JIC with 1/2 dia. hose. Pay close attention not to allow lines to be swapped between pressure and return. When levelers with Power Hooks are installed the return lines will have #10 JIC and 3/4 dia hose.

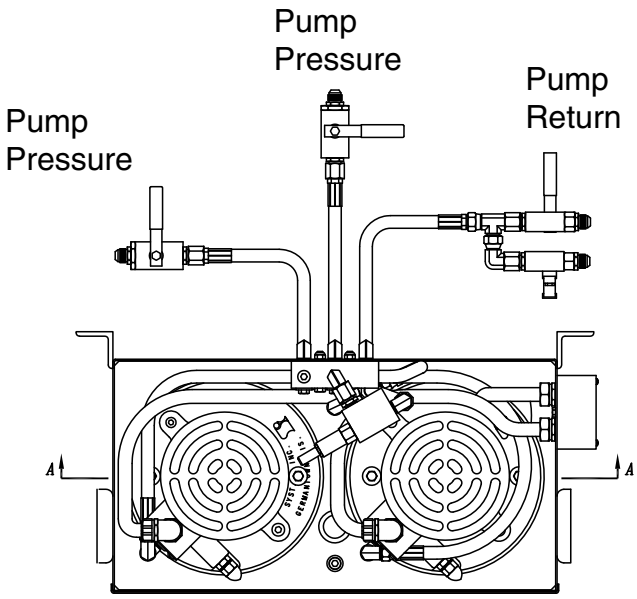
When all hoses valves and hydraulic connections are made and tight. Fill the reservoir with oil (see page 15).

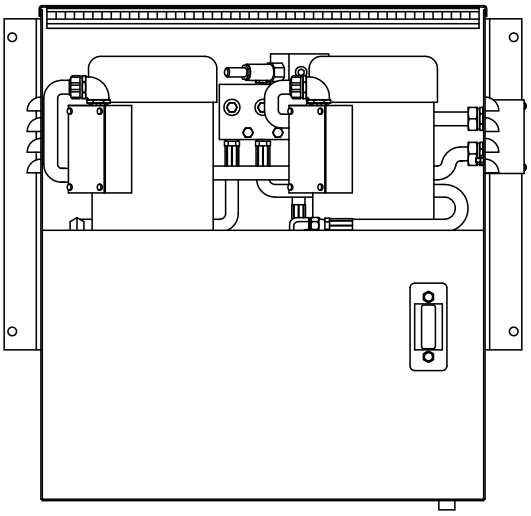
Fill the Pump Station reservoir (capacity 12 gals) to the full mark. Starting from the furthest dock from the pump station, operate all the levelers and the restraints through several cycles to purge all the air out of the system. Once all levelers have been cycled several times, have all the levers in the below dock position. **Note**: On Centra Power Systems were both motors must operate simultaneously run all the time the rotation must be checked. To check rotation run only one motor at a time the levelers will work but run slow.

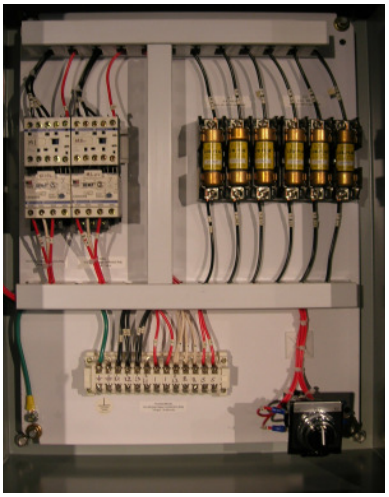
Component Identification



SECTION "A-A" WITH MOTORS REMOVED







Centra Power main control panel should be located near the Centra Power pump station.

The pump control panel has 2 indicator lights located on the door. There is 3 position switch mounted inside the door. The switch on the system controls one or both motors when a leveler has been activated. The lights on the control indicate if one or both motor starters have tripped.

If one pump systems is in operation, use selector switch to rotate motors every 6 months. This will insure proper operation of the systems.

WARNING

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded

DO NOT grind or weld if un contained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

Failure to follow these instructions may result in serious personal injury or death.

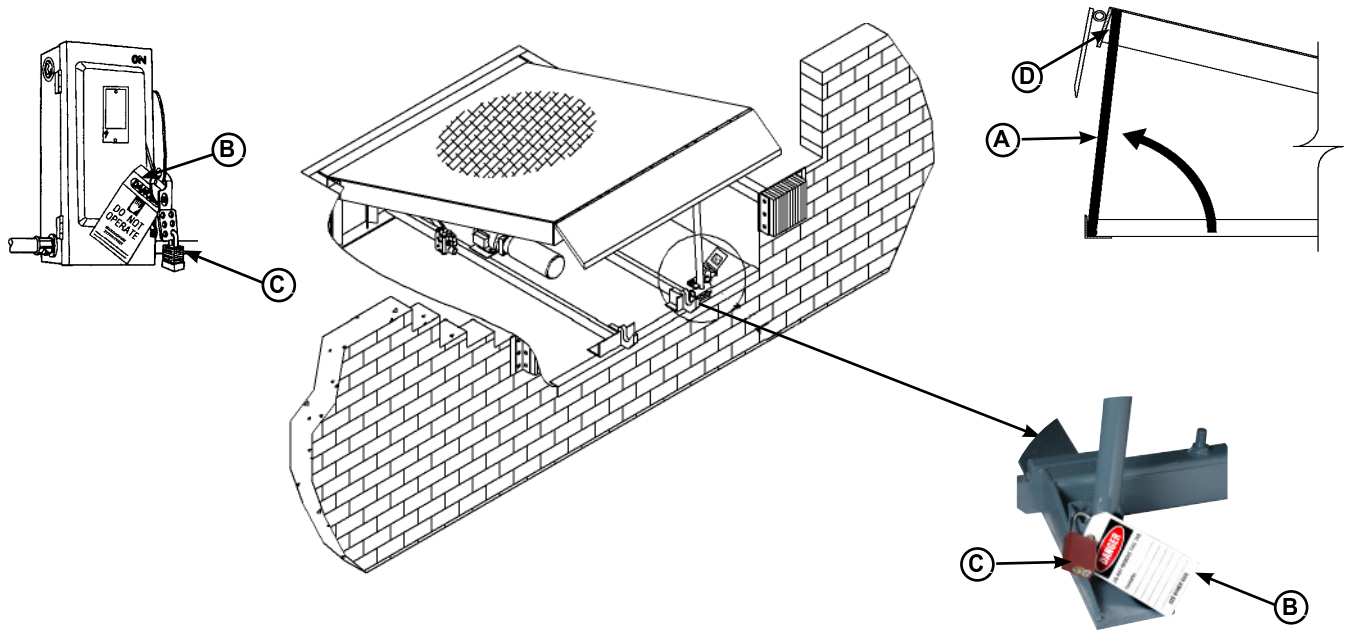
IMPORTANT

DO NOT connect the dock leveler electrical wiring and ground connections until all welding has been completed.

DO NOT ground welding equipment to any hydraulic or electrical components of the dock leveler. Always ground welding equipment to the dock leveler frame, NEVER to the platform.

Failure to follow these instructions may damage the motor, hoist cylinder, wiring, and/or control panel.

Service Dock Leveler Safely



A— Maintenance Prop B —Tag Out Device C — Lock Out Device D — Front Header

WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.

WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

Whenever maintenance is to be performed under the dock leveler platform, support the platform with maintenance prop (A). Position the maintenance prop behind front header plate (D) while staying clear of the lip. The lip will fold down after the platform has rested on the maintenance prop. Lock the maintenance prop in the service (upright) position using an OSHA approved lockout device* (C) and tagout device* (B).

Whenever servicing the dock leveler, lock the electrical power disconnect in the OFF position. Use only an OSHA approved lockout device* (C) and tagout device (B).

Only the person servicing the equipment should have the capability to remove the lockout devices. The tagout devices* must inform that repairs are in process and clearly state who is responsible for the lockout condition.

* Refer to OSHA regulation 1910.146
* Refer to OSHA regulation 1910.147.

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Periodic Maintenance

Regular maintenance must be performed on a weekly and quarterly schedule. For proper lube points see owners manual for the equipment to be maintained.

Weekly Maintenance

- Operate the dock leveler through the complete operating cycle to maintain lubrication.

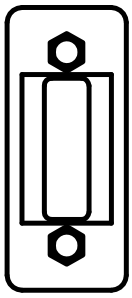
NOTE: To thoroughly inspect the platform hinge area, put the platform in the full below-dock position.

- Inspect the platform hinge and the lip hinge areas. The hinge areas must be kept free of dirt and debris. Build-up of foreign material in the hinge areas will cause abnormal operation.

Quarterly Maintenance

IMPORTANT

Failure to properly lubricate the dock leveler will cause abnormal operation of the leveler.



Sight Glass

- Fluid level must be checked periodically.

1. Pit levelers with or without restraints. levelers must be in the below dock/cross-traffic position level must read in the sight glass area.
2. VS Levelers with or without restraints must be in the stored positon leveler should level must be in site glass area.
3. Add hydraulic fluid if necessary. Use only recommended fluid.

IMPORTANT

A low fluid level or the use of hydraulic fluids not equivalent to the fluid types recommended, will cause abnormal operation of the leveler and WILL void warranty.

To ensure normal operation of the dock leveler, use only aircraft hydraulic fluid designed to meet or exceed military specification MIL-H-5606-G. It is recommended that the following hydraulic fluids be used:

- Ultra VIS HVI 15
- Aero Shell Fluid 4 or Fluid 41
- Mobile Aero HFA Mil-HS606A or Aero HF
- Texaco Aircraft Hydraulic Oil 15 or 5606
- Exxon Univis J13

These fluid brands can be mixed together. Mixing with fluids that do not meet or exceed MIL-H-5606-G may damage the equipment and WILL void warranty. Use of hydraulic fluids with equivalent specifications to those listed here are acceptable.

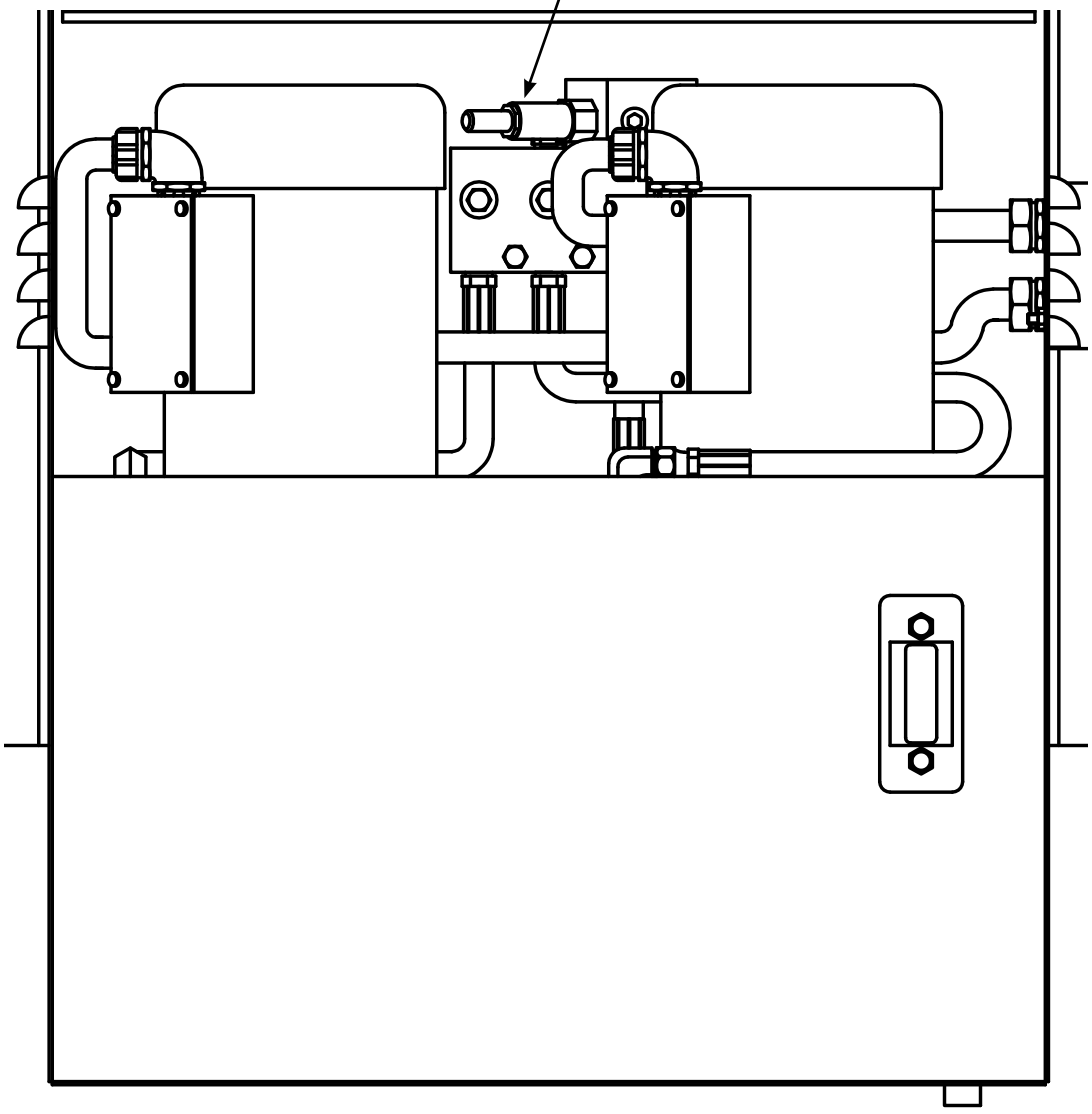
IMPORTANT

Use of fluids that do not have equivalent specifications to those in the following list will result in abnormal operation of the dock leveler and voiding of warranty.

ADJUSTMENTS

Pressure relief:

Main pressure relief is pre set from the factory Call Tech Services before adjustments are made.



Troubleshooting

WARNING

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop. Failure to do this may result in serious personal injury or death.

WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete. Failure to do this may result in serious personal injury or death.

WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

The maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

Failure to follow these instructions may result in serious personal injury or death.

Before performing the detailed troubleshooting procedures, check the following items first:

- Check all fuses inside the control panel(s). Replace any blown fuse(s) with a fuse of equal specification.
- Make sure the correct voltages are present at the proper locations inside the control panel(s).

Symptom	Possible Cause	Solution
Platform or restraint will not operate. Motor does not energize.	Motor overload device tripped or fuse blown.	Reset 3phase overload relay (Located next to pump station) or replace fuse. Reset 120 volt overload relay or replace fuse in the individual control box's. *NOTE: When replacing fuse(s), the new fuse must have the same specification as the old fuse.*
	No voltage at over loads or relays	Check voltage at starter or relay coil. • If voltage is present and starter or relay does not energize, replace starter or relay. • If voltage is not present, check all components in series with the starter or relay coil.

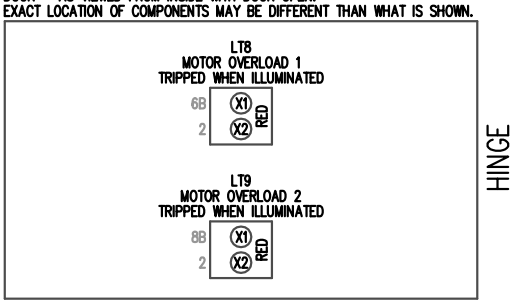
TROUBLESHOOTING

Symptom	Possible Cause	Solution
Platform or restraint will not operate correctly, motor hums, but does not rotate.	No voltage is present on one line. *NOTE: A motor that is missing voltage on one line is said to be single-phased.*	Check for blown fuses at branch circuit disconnect. Replace fuse. Determine cause of blown fuse.
		Check motor starter as follows: 1. Disconnect wires at load side of starter. 2. Energize the starter. 3. Measure line-to-line voltage at line side of starter. 4. Measure line-to-line voltage at load side of starter. 5. Line-side and load-side voltages should be approximately the same. Replace starter if voltage values are considerably different from one another.
		Check all wiring to motor for high resistance or no connection.
Platform does not rise to full height.	Low hydraulic fluid.	Add fluid as needed. See Periodic Maintenance in the Maintenance section.
Motor rotates but platform or restraint not operating.	Phase reversed.	Reverse any two legs at the branch circuit disconnect.
Platform rises slowly	Pressure relief set too low.	Consult the factory, contact tech before adjustments are made.
Only one Platform or restraint not operating.	Bad coil on Centra Power valve block.	The coil will magnetized when energized (Pump Motor must be running)
	Bad Valve on Centra Power valve block.	Remove and clean spool valve or replace with new or good working valve.
Platform or restraint operates when other units have been activated.	Bad Valve on Centra Power valve block.	Remove and clean spool valve or replace with new or good working valve.
Platform does not raise. Pump runs, Coil and valve are good.	See Leveler specific manual.	
Restraint does not operate. Pump runs, Coil and valve are good.	See restraint specific manual.	

Centra Power Control Panel

BILL OF MATERIAL			
LEGEND	QTY	PART NUMBER	DESCRIPTION
ENCL	1	SEE TABLE 1	ENCLOSURE
	1	2751-0108	MTG FEET (IF NOT N4X FGLASS)
PNL	1	SEE TABLE 1	PANEL
TB1	13	1431-0219	TERMINAL BLOCK
	1	1431-0220	TERM BLOCK END
	6	1431-0036	TERM BLOCK JUMPER
	2	1431-0221	TERM BLOCK CLAMP
FB1,2	2	5101-0116	FUSE BLOCK
FU1,2	6	SEE TABLE 2	FUSE
M1,M2	2	7141-0143	CONTACTOR
M1OL,M2OL	2	7141-0149	OVERLOAD RELAY - 208 & 230 V [a]
		7141-0147	OVERLOAD RELAY - 460 V [a]
		7141-0146	OVERLOAD RELAY - 575 V [a]
SS4	1	0961-0012	SELECTOR SWITCH
KB1	1	0961-0013	CONTACT BLOCK - STANDARD WIRING
		0961-0025	CONTACT BLOCK - OPTIONAL WIRING
LP1	1	1751-0018	LEGEND PLATE - STANDARD WIRING
		1751-0084	LEGEND PLATE - OPTIONAL WIRING
LT8,9	2	0961-0316	INDICATOR LIGHT (IF NOT N4X FGLASS)
		0961-0374	INDICATOR LIGHT (IF N4X FGLASS)
	2	0961-0320	RED LENS (IF NOT N4X FGLASS)
		0961-0378	RED LENS (IF N4X FGLASS)
-----	1	1751-0223	DECAL - ENGLISH
		1751-0225	DECAL - FRENCH
		1751-0392	DECAL - SPANISH
-----	1	1751-0224	DECAL - ENGLISH
		1751-0226	DECAL - FRENCH
		1751-0393	DECAL - SPANISH
-----	2	1751-0163	DECAL [b]
-----	1	1751-0081	DECAL - ENGLISH
		1751-0395	DECAL - FRENCH
		1751-0396	DECAL - SPANISH
-----	1	3053-0001	SWITCH MTG BRACKET
-----	1	1751-0363	LABEL [f]
-----	2	1751-0367	LABEL [f]
-----	2	1751-0394	LABEL [f]
-----	1	1751-0391	LABEL [g]

DOOR - AS VIEWED FROM INSIDE WITH DOOR OPEN.
EXACT LOCATION OF COMPONENTS MAY BE DIFFERENT THAN WHAT IS SHOWN.



PANEL - EXACT LOCATION OF COMPONENTS MAY BE DIFFERENT THAN WHAT IS SHOWN.
BOLD LINES INDICATE FIELD WIRING.

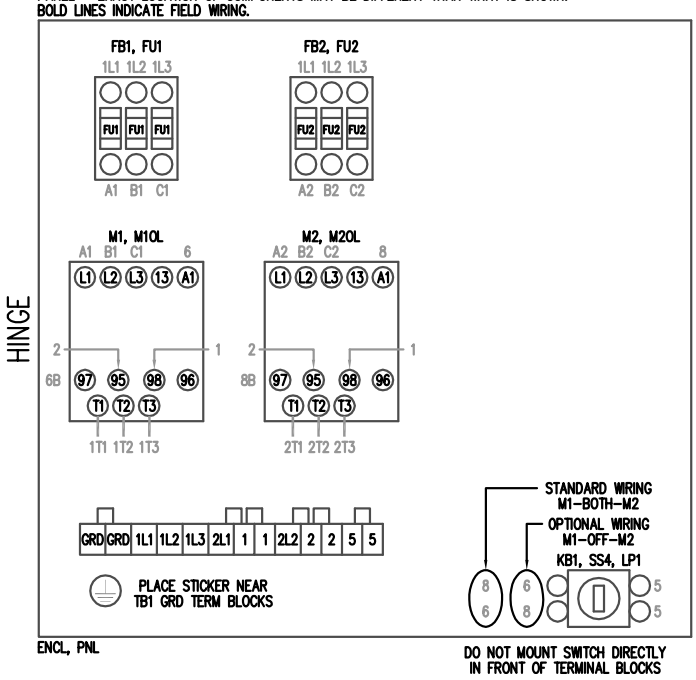


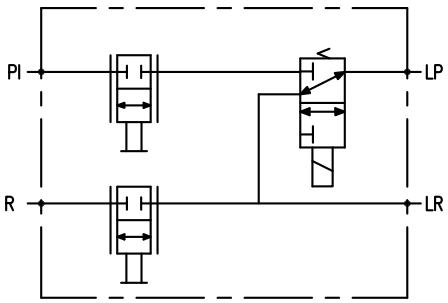
TABLE 1					
		OPTIONAL NEMA 4X STAINLESS		OPTIONAL NEMA 4X FIBERGLASS	
ENCL	PNL	ENCL	PNL	ENCL	PNL
2751-0105	2751-0107	2751-0161	2751-0107	2751-0163	2751-0065

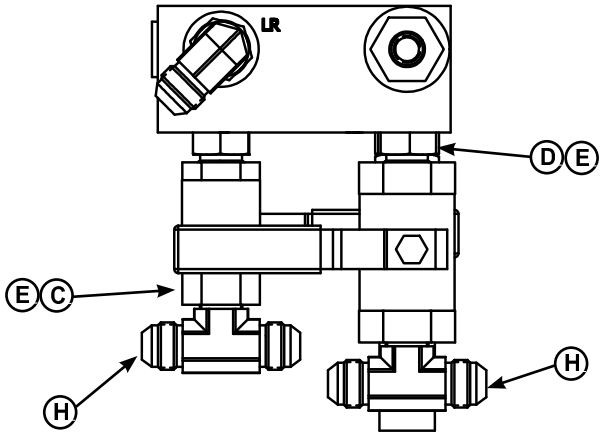
TABLE 2		
	FU1 & FU2	
VOLTAGE	AMPS	PART NO
208 V	10	5101-0099
230 V	9	5101-0089
460 V	4.5	5101-0097
575 V	3.5	5101-0100

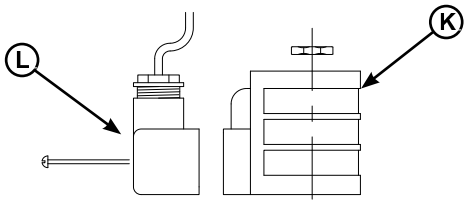
TABLE 3		
	3 PHASE FLA (AMPS)	
VOLTAGE	STANDARD WIRING M1-BOTH-M2	OPTIONAL WIRING M1-OFF-M2
208 V	9.2	4.6
230 V	8.4	4.2
460 V	4.2	2.1
575 V	3.4	1.7

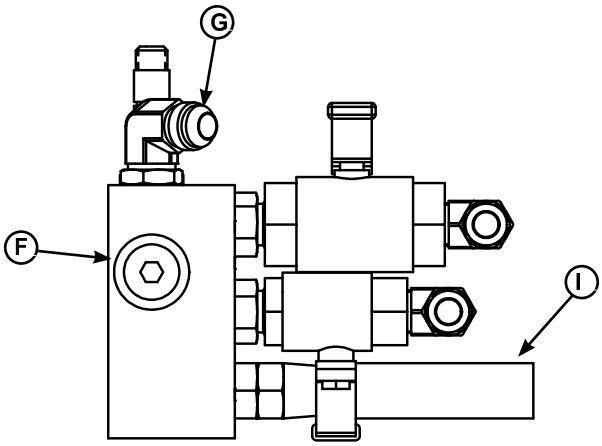
PARTS

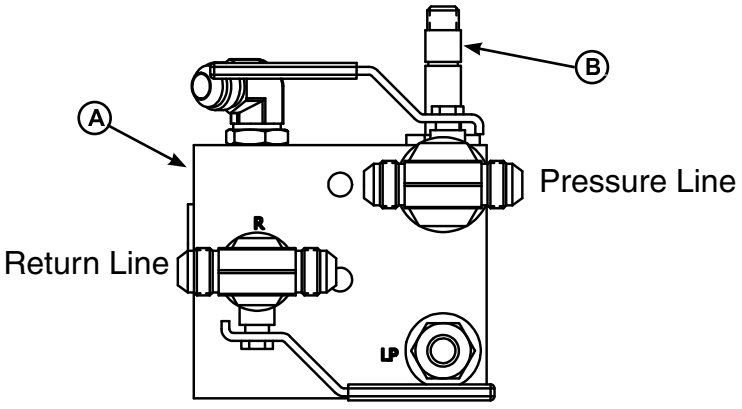
Mid Run Valve W/O Hook











Coil De-Energized when lever or restraint is Engaged **not** in use.
Coil Energized when lever or restraint is Engaged.

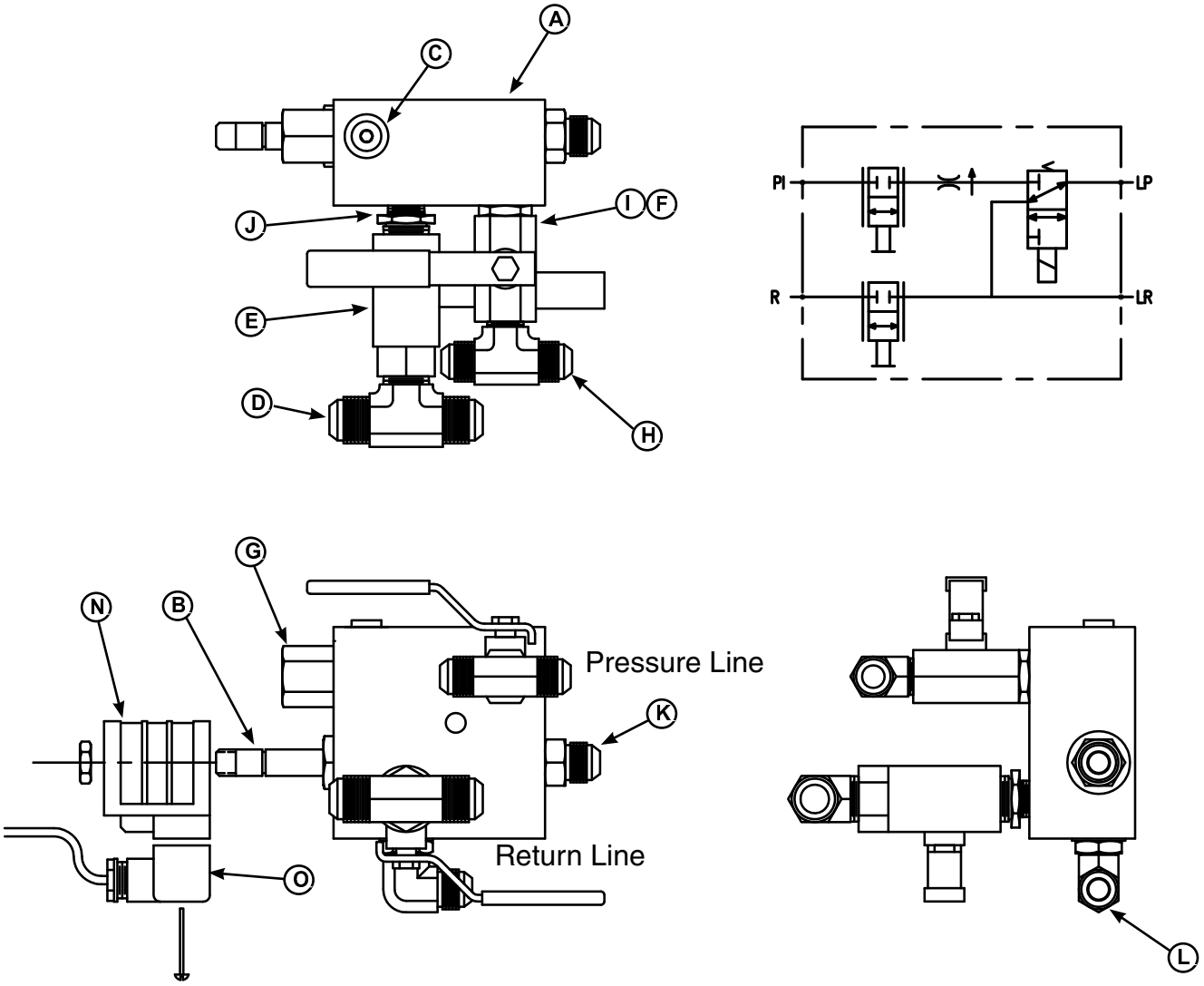
IF used as run is end cap will be required

*Provide dock leveler serial number when calling or faxing orders.

Mid Run Valve W/O Hook

Item	Quantity	Part Number	Description
A	1	-	Valve Manifold
B	1	8581-0005	Valve - Cartridge - 3 way
C	1	8581-0001	Ball Valve - Bronze, Return
D	1	8581-0002	Ball Valve - Steel, Pressure
E	2	9301-0246	Fitting - #8ORB Male / 3/8 NPT
F	1	0521-0108	Fitting - #8 JICM Plug
G	1	9301-0116	Fitting - Elbow 90 male #8 JIC
H	2	9301-0054	Fitting - Branch - Tee - Male #8 JIC
I	1	9904-0078	Hyd Hose -3/8 x 35.00 Hose
J	1	8583-0021	Centra Power Mid Run W/O Restraint
K	1	8581-0004	Delta Coil
L	1	4301-0004	Cable Assembly
M	2	0521-0021	Fitting - #8 End Cap (Not Shown)

Mid Run Valve W/Hook



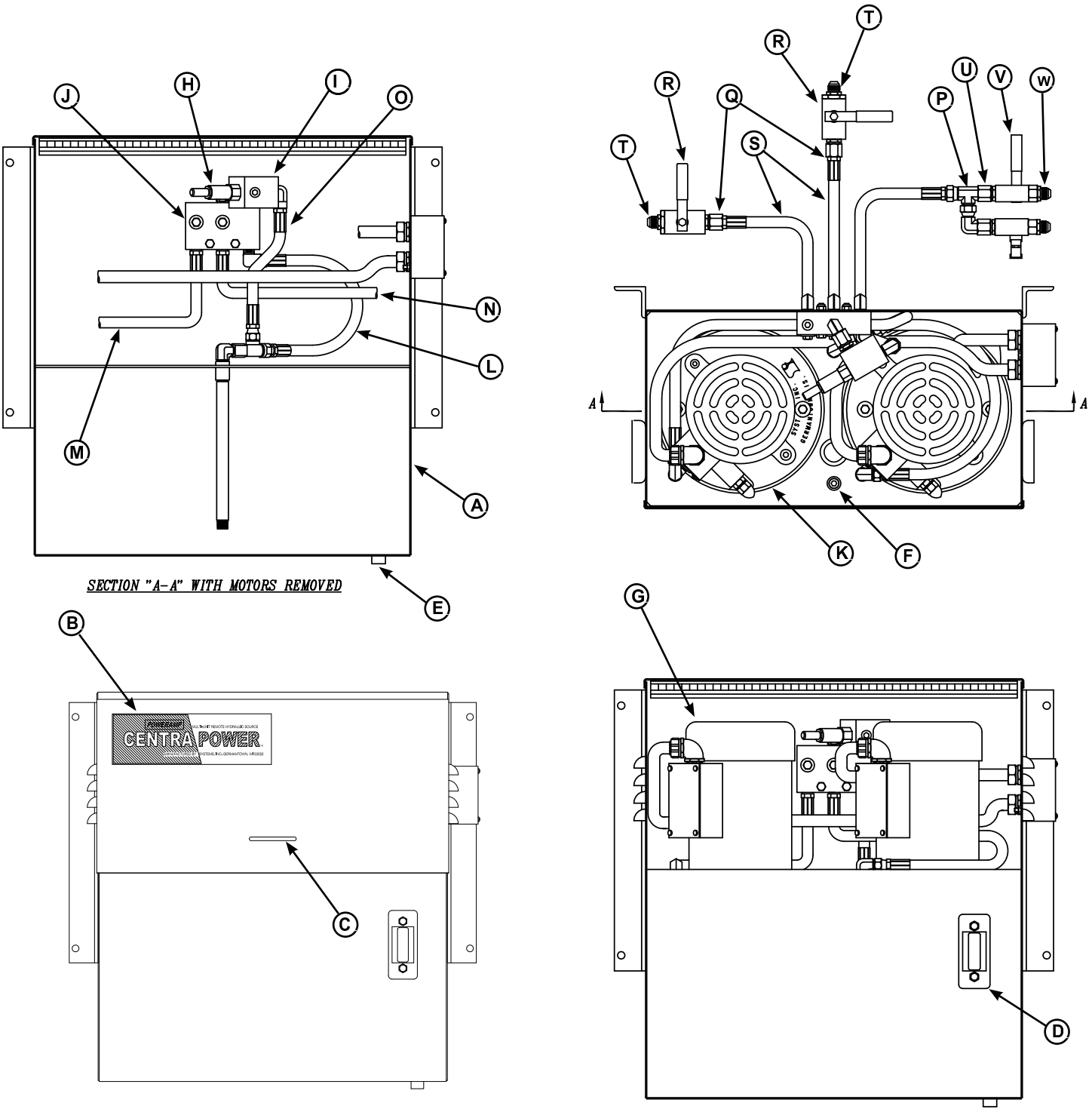
Coil De-Energized when lever or restraint is Engaged **not** in use.
Coil Energized when lever or restraint is Engaged.

IF used as run is end cap will be required

Mid Run Valve W/Hook

Item	Quantity	Part Number	Description
A	1	-	Valve Manifold
B	1	8581-0005	Valve - Cartridge - 3 way
C	1	9301-0104	Fitting #4 SAE
D	1	9301-0098	Fitting - Male Branch Tee #10 JIC
E	1	8581-0072	Ball Valve - Bronze 1/2 NPT
F	1	9301-0246	Fitting - 3/8 NPT x #8 Male
G	1	8581-0092	Valve - Flow Control - 5 GPM
H	1	9301-0054	Fitting - Branch - Tee - Male #8 JIC
I	1	8581-0002	Ball Valve - Steel
J	1	9301-0247	Fitting - 1/2 NPT #8 ORB Male
K	1	9301-0112	Fitting - #8 ORB x #8 JIC
L	1	9301-0116	Fitting - Elbow 90 deg #8 ORB x #8 JIC
M	1	8583-0031	Centra Power Mid Run With Restraint & Flow Limiter
N	1	8581-0004	Delta Coil
O	1	4301-0004	Cable Assembly
P	1	0521-0021	Fitting - #8 End Cap (Not Shown)
Q	1	0521-0106	Fitting - #10 End Cap (Not Shown)

Pump Station

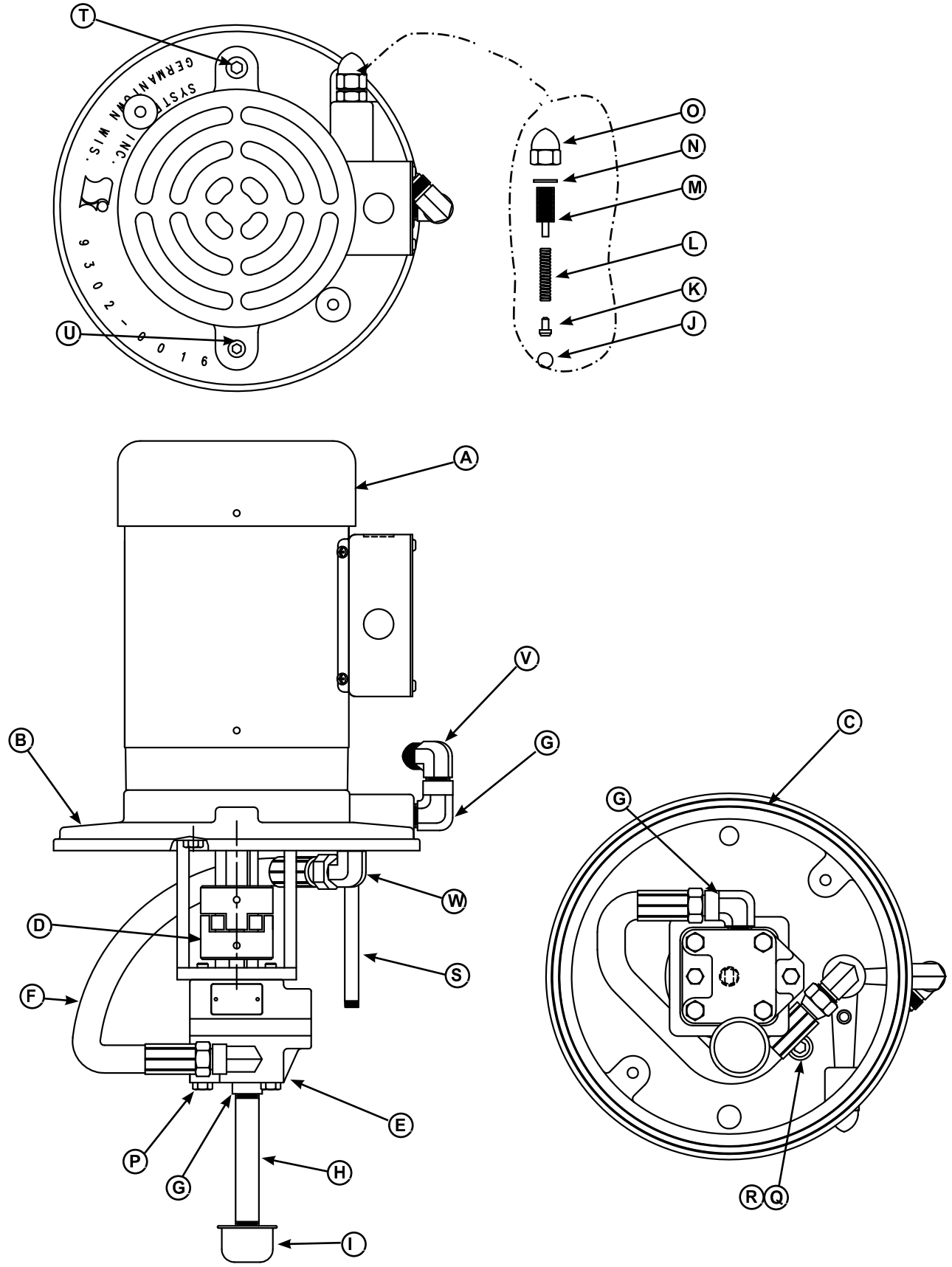


Pump Station

Item	Quantity	Part Number	Description
A	1	9394-0003	Enclosure Weldment
B	1	1751-0072	Decal
C	1	9301-0048	Handle
D	1	9301-0049	Site Glass (Includes O-Ring)
E	1	9571-0005	Drain Plug
F	1	9301-0199	Breather Cap 3/8” NPT
G	2	9301-____ [1]	Pump Assembly
H	1	8581-0037	Valve Assembly, Centra Power Relief
I	1	8583-0037	Valve Assembly, Includes Relief and Hose (Includes Items H &O)
J	1	8585-0001	Valve Assembly, Blending
K	2	9301-0027	0-Ring
L	1	9904-0090	Hose, 17.50” Lg. #8 JIC Swivel Both Ends
M	1	9904-0082	Hose, 21.75” Lg. #8 JIC Swivel Both Ends
N	1	9904-0106	Hose, 28.00” Lg. #8 JIC Swivel Both Ends
O	1	9904-0107	Hose, 9.00” Lg. #8 JIC Swivel Both Ends
P	1	9393-0008	Tee #8 Jic
		9393-0009	Tee #10 Jic
Q	1	0521-0032	Male Swivel Nut 3/8 NPTM x JICF Swivel
R	1	8581-0002	Valve, Ball 3/8 NPT (Steel)
S	2	9904-0044	Hose, 24.00” Lg. #8 JICM / #8JICF Swivel
T	2	0521-0015	Male Connector 3/8 NPTx #8 JIC
U	2	0521-0032	Male Swivel Nut 3/8 NPTM x #8 JICF Swivel
		9301-0193	Male Swivel Nut 1/2 NPTM x #10 JICF Swivel
V	2	8581-0001	Bronze Ball Valve 3/8 NPT
		8581-0072	Bronze Ball Valve 1/2 NPT
W	2	0521-0015	Male Connector 3/8 NPTM x #8 JICM
		9301-0194	Male Connector 1/2 NPTM x 10 JICM

[1] Provide dock leveler serial number and type of installation when calling or faxing orders.
[2] Provide dock leveler serial number, voltage, and phase when calling or faxing orders.

Pump and Motor



Pump and Motor

Item	Quantity	Part Number	Description
A	1	3411-0043	Motor 460 3 PH 1-1/2 hp
	1	3411-0045	Motor 460 3 PH 3 hp
B	1	-	Drive Plate
C	1	9301-0027	O-Ring
D	1	9302-0065	Coupler (Love Joy)
E	1	9301-0204	Pump 5 GPM
	1	9301-0205	Pump 4 GPM
F	1	9904-0001	Hose Assy - 3/8 17.500 Lg. #6 SAE to #8 JIC
G	3	9301-0007	Fitting Elbow 90 Deg 3/8 NPTM X 3/8
H	1	9301-0206	Fitting 3/8 NPT x 4-1/2
I	1	9301-0009	Strainer
J	1	0521-0014	Ball - Steel
K	1	9301-0024	Guide - Ball Check
L	1	9302-0009	Spring - Pressure Relief
M	1	9303-0003	Screw Adjusting
N	1	9301-0014	Washer - Nylon
O	1	9301-0016	Acorn Nut - High Crown
P	4	2101-0016	Hex Head Capscrew 5/16 UNC x 3-1/2 Lg.
Q	2	9301-0003	Washer - Aluminum
R	2	9301-0004	Socket Head Cap Screw 3/8 UNC x 1-3/4 Lg.
S	1	9301-0069	Fitting Pipe Nipple 1/8 Npt x 5 Lg.
T	1	9301-0106	Fitting, Plug Hollow Hex, Str Thread
U	1	9571-0006	Fitting, 1/4 NPTM
V	1	9301-0145	Fitting, Elbow, 90 Degree, Swivel Nut
W	1	0521-0016	Fitting, Elbow, 90 Degree

* Provide dock leveler serial number and size of platform when calling or faxing orders.

NOTES

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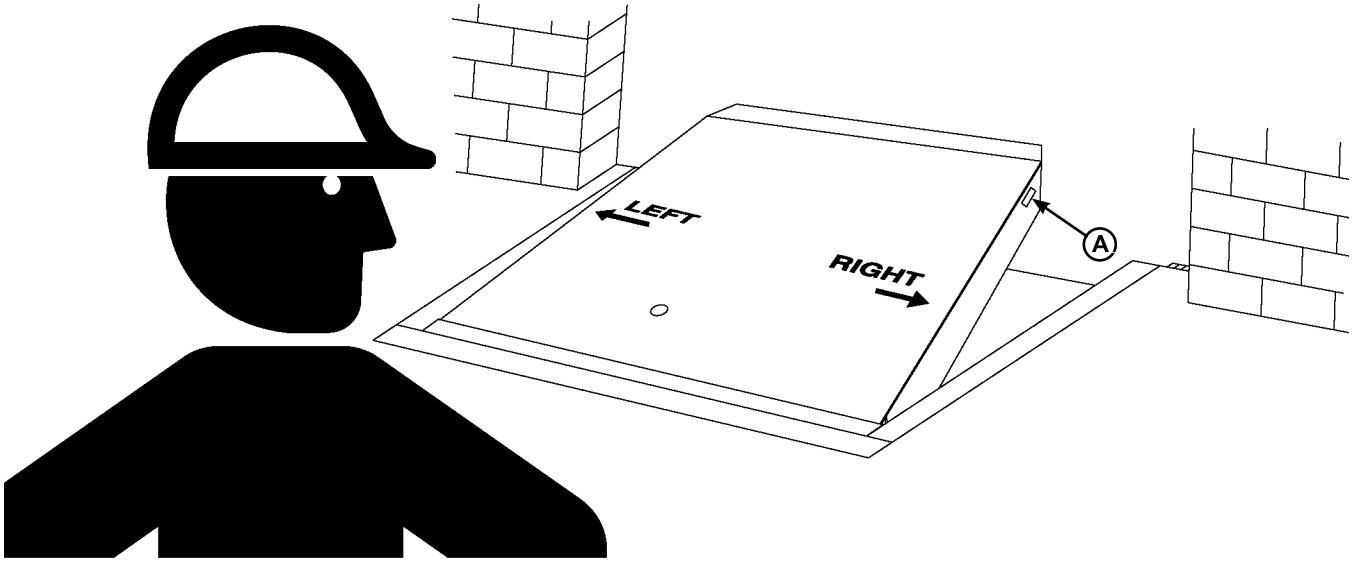
Customer Information



NOTE: Refer to illustration for left/right orientation of dock leveler.

The model/serial number decal (A) is located on the right platform joist near the front (lip) of dock leveler.

When you receive your dock leveler, write down the dock leveler model and serial number in the form provided. This will help ensure safe keeping of the numbers in the event the model/serial number decal (A) becomes lost or damaged.

Also, write down Systems, Inc.'s job number, the company that installed the dock leveler, and the original owner's name. This will all help to identify the specific dock leveler if more information is required.

When ordering, use part numbers and description to help identify the item ordered. Do not use "item" numbers. These are only for locating the position of the parts. Always give dock leveler MODEL NUMBER and/or SERIAL NUMBER.

For service, call or contact:

Systems, Inc.
P.O. Box 309
Germantown, WI 53022

Phone: (800) 643-5424
Fax: (262) 255-5917

Dock Leveler Information

Model _____

Serial No. _____

Systems, Inc., Job No. _____

Original Owner Information

Name _____

Address _____

_____

Installer Information

Name _____

Address _____

_____

Date of Installation _____

STANDARD PRODUCT WARRANTY

SYSTEMS, INC. warrants that its products will be free from defects in design, materials and workmanship for a period of one (1) year from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can with reasonable care, be detected. In no event shall any claim be made more than 30 days after this warranty has expired. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the Owner/User.

In the event of a defect, as determined by SYSTEMS INC., covered by this warranty, SYSTEMS INC. shall remedy such defect by repairing or replacing any defective equipment or parts, bearing the cost for the parts, labor and transportation. This shall be exclusive remedy for all claims whether based on contract, negligence or strict liability.

WARRANTY LIMITATIONS

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SYSTEMS INC. AND ITS SUBSIDARIES SHALL NOT IN ANY EVENT BE LIABLE TO ANYONE, INCLUDING THIRD PARTIES, FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY, LOSS OF USE, LOSS OF PROFIT, INTERUPTION OF BUSINESS OR LOSS OF GOODWILL.